

INTERNSHIP REPORT (Summer16)

SUPPLIER MANAGEMENT PROCESS

OF

ACI LIMITED, BANGLADESH

(A Critical Approach for Evaluating the Performance of Supply Chain Management of ACI Limited and Identifying Challenge and Establishing Best Business Process Model)

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Submitted To
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Submission date: 7th September, 2016

LETTER OF TRANSMITTAL

Date: 7th September, 2016

To

Mr. Md. Tamzidul Islam

Assistant Professor

BRAC Business School

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Subject: Submission of Internship Report.

Dear Sir,

It gives me great pleasure to submit the internship report on ACI Chemicals Limited namely **“Supplier Management Process of ACI Limited, Bangladesh”**, which is a partial requirement for the fulfilment of BBA degree. The report consists of the overview of the supply chain of ACI, Risk Factors, Challenges and Solution of the current infrastructure etc. It's a great pleasure to let you know that I have tried to make my paper as comprehensive as possible.

I am grateful to you for giving me such an opportunity as well the guidelines that you have invested on me and I appreciate this internship program. I hope that you will cordially receive my internship paper.

Sincerely Yours,

Erfan Md Zaki

ID- 12204050

BRAC Business School

BRAC University

ACKNOWLEDGEMENT

First and foremost, I am always grateful to the Almighty for all the blessings and mercies at every instant of our lives. Then, I would like to express my appreciation and gratitude to all those without whose support and help this project and my internship would not have completed successfully. I cannot express enough thanks to my Supervisor **Md. Tamzidul Islam**, (Assistant Professor, BRAC Business School, BRAC University) whose constant effort, guidance, knowledge, expertise, advice and dedicated involvement throughout the process have made it possible to accomplish the project in limited time frame. The deepest and a very special gratitude I give to all my faculties for their immense support, time, advice, stimulating expert suggestions and encouragement which continually motivated me and conveyed a winning spirit in me towards learning. I also express my warm gratitude and cordial thanks to the management of **Advance Chemical Industries (ACI) Limited** who have given me the opportunity to work with them and help a lot by providing the important information and enabling me to prepare the report. I have received their generous support and help and also special thanks to **Md. Mainuddin Patwary**, Business Development Manager of ACI Chemicals Limited who has been a very good Mentor and trainer who has helped me a lot to learn all the details of research and methodologies, importance of analytical approach to evaluate problems etc.

Last but not the least I am thankful and indebted to my family and friends for their unceasing, unconditional and unlimited support, love and motivation.

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EXECUTIVE SUMMARY

The internship report titled on “**Critical Evaluation of Supplier Management Process of ACI Limited Bangladesh**” is prepared as a requirement of the BBA Program in BRAC Business School, BRAC University.

The study has worked in ACI Limited, during the internship period. The company was established as the subsidiary of Imperial Chemical Industries (ICI) in 1968. Starting in 1992, the company has diversified business interest in pharmaceuticals, consumer brands agricultural including fishery & livestock and consumer brands. ACI is a fast growing company that has substantial contribution in the economy of Bangladesh. People trust on them as they are going forward with a mission to enrich the quality of life of people through responsible application of knowledge, skills, and technology.

In the first chapter, the objectives are mentioned that involve gaining the practical experience of Supplier selection and retention process of ACI Chemicals limited. In this regards, I have to visit a lot of suppliers to gain a brief insight about the network as well as some challenges everyday supply chain professionals faces. To evaluate the current process, market data are collected from both primary and secondary sources. The scope of preparing this report and some limitations are also covered here which in practice will help ACI to gain more efficiency and become the market leader in supply chain infrastructure.

In Chapter 2 a descriptive analysis is conducted here to identify the Supplier selection process, factors related to the supplier’s location, contract administration, transportation channels, performance evaluation and the Risk Assessment of ACI Suppliers. Besides, identifying different divisions of ACI Chemicals Limited, the important factors of sourcing from suppliers with special attention to the sourcing process of the organization also discussed in the report. The part also describes the transportation facilities used by ACI to gear up the supply chain process alongside with a performance analysis process for evaluating the current partners in the supply chain and new partner selection process.

At the end some recommendation are made based on the findings to improve the Supplier selection and retention process of ACI Chemicals limited.

CHAPTER ONE

COMPANY PROFILE

1.1 Background of ACI

Advanced Chemical Industries (ACI) Limited is one of the leading conglomerates in Bangladesh, with a multinational heritage. It was established as a subsidiary of Imperial chemical Industries (ICI) plc, U.K in 1968, at that time it was one of the oldest industrial units in our country. After the liberation war, the enterprise was declared „abandoned“. On 24 June 1973, the factory re started its operations under the name ICI Bangladesh Manufactures Limited. “On the 5th of May 1992, ICI plc divested 70% of its share to local management and hence the company, ACI Limited came into existence” (Aci-bd.com, 2015). Today ACI Limited is a leading corporate body in Bangladesh. It is a public limited company with a total number of 15,550 shareholders. Among these, there are six foreign as well as fourteen local institutional shareholders. In the organizations official website Aci-bd.com declared that “This Company also obtained listing with Dhaka Stock Exchange on 28 December, 1976 and its first trading of shares took place on 9 March, 1994. Later on 5 May, 1992, ICI plc divested 70% of its shareholding to local management”. Subsequently the company was registered in the name of Advanced Chemical Industries Limited. Listing with Chittagong Stock Exchange was made on 22 October 1995.

1.2 Strategic Business Units of ACI

ACI has diversified its business into four major Categories:

- **Pharmaceuticals**
- **Consumer Brands & Commodity Products**
- **Retail Chain**
- **Agribusinesses:**
 - Crop Care Public Health
 - Animal Health
 - Fertilizer

- Motors
- Cropex

Subsidiaries of ACI:

- ACI Formulations Limited
- ACI Logistics Limited
- ACI Pure Flour Limited
- ACI Foods Limited
- ACI Salt Limited
- ACI Motors Limited
- Creative Communication Limited
- Premiaflex Plastics Limited
- ACI Agrochemicals Limited
- Flyban Insecticides Limited
- Apex Leather Crafts Limited
- ACI Edible Oils Limited
- ACI Healthcare Limited
- ACI Chemicals Limited

Joint Ventures with ACI:

- ACI Godrej Agrovvet Private Limited
- Tetley ACI (Bangladesh) Limited
- Asian Consumer Care (Pvt) Limited.

1.3 Organogram of ACI Limited

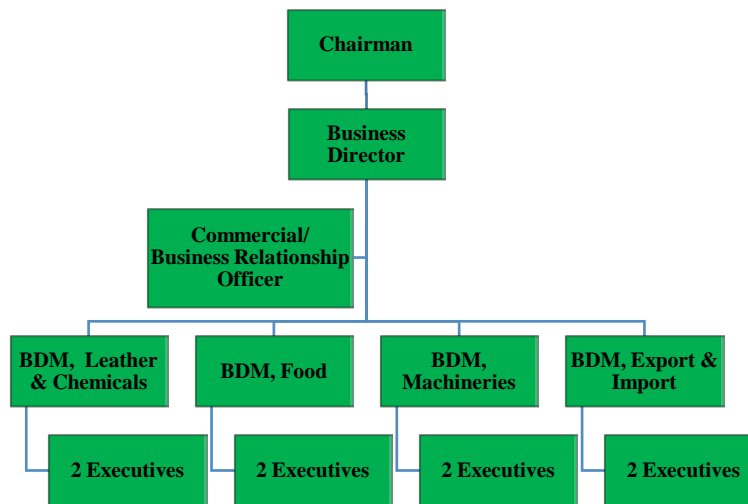


Figure1.1: Overall ACI's Hierarchy (Source: Primary Data)

1.4 Mission of ACI

ACI's mission is to enrich the quality of life of people through responsible application of knowledge, skills and technology. ACI is committed to the pursuit of excellence through world-class products, innovative processes and empowered employees to provide the highest level of satisfaction to its customers.

1.5 Vision of ACI

- Endeavor to attain a position of leadership in each category of its businesses.
- Attain a high level of productivity in all its operations through effective and efficient use of resources, adoption of appropriate technology and alignment with our core competencies.
- Develop its employees by encouraging empowerment and rewarding innovation.
- Promote an environment for learning and personal growth of its employees.
- Provide products and services of high and consistent quality, ensuring value for money to its customers.

- Encourage and assist in the qualitative improvement of the services of its suppliers and distributors.
- Establish harmonious relationship with the community and promote greater environmental responsibility within its sphere of influence.

1.6 ACI Quality Policy

ACI is the first company in Bangladesh to have obtained ISO 9001 Certification for Quality Management System across all categories.

To attain the Vision ACI will:

- Aim to achieve business excellence by understanding, accepting, meeting and exceeding customer expectations.
- Follow International Standards on Quality Management System to ensure consistent quality of products and services to achieve customer satisfaction.
- ACI will also meet all national and regulatory requirements relating to its current businesses and ensure that current Good Manufacturing Practice (cGMP) as recommended by World Health Organisation is followed for its pharmaceutical operations and conform to all other guidelines and best practices relating to its other businesses.
- Commit itself to quality as the prime consideration in all its business decisions. All employees of ACI follow documented procedures to ensure compliance with quality standards.
- Develop a pool of human resources of the Company to their full potential by regular training and participation in seeking continuous improvement of the Quality Management System.

1.7 SWOT Analysis

A business strategy and decision making is mainly influenced by marketers. Accepting the environment that a business will drive in is one of the major steps marketers should instigate in their research. SWOT describes Strengths, weaknesses, opportunities and threats. SWOT

analysis is very much effortless but as a constructive instrument marketers can simply relate to better realize the business background. Though findings made in SWOT, a business can successfully penetrate the marketplace and rapidly capitalize on opportunities. In the article named why is a SWOT important to marketers? Bryant, (2015) stated that “differentiators between you and your competitors can be identified by the help of SWOT analysi”. In another article “SWOT analysis help with branding and marketing” Makos, (2015) mention that “SWOT is an analysis which helps firms to identify the internal and external factor that might affect future performance”. Moreover, Chand, (2014) declare “The fundamental intention of doing SWOT analysis is to give a structure to reflect on the firm’s capability to beat obstacles and gain the opportunities those are promising in the surrounding” in her article importance of SWOT analysis in business. In reality the dimensions of internal capabilities have relevance so far, as they relay to the environmental circumstances. Adding up, the analysis of relative strengths and weaknesses involves liking internal aptitudes with the distinctiveness of the external environment. Considering these statements the importance of SWOT of a company can be clearly understood.

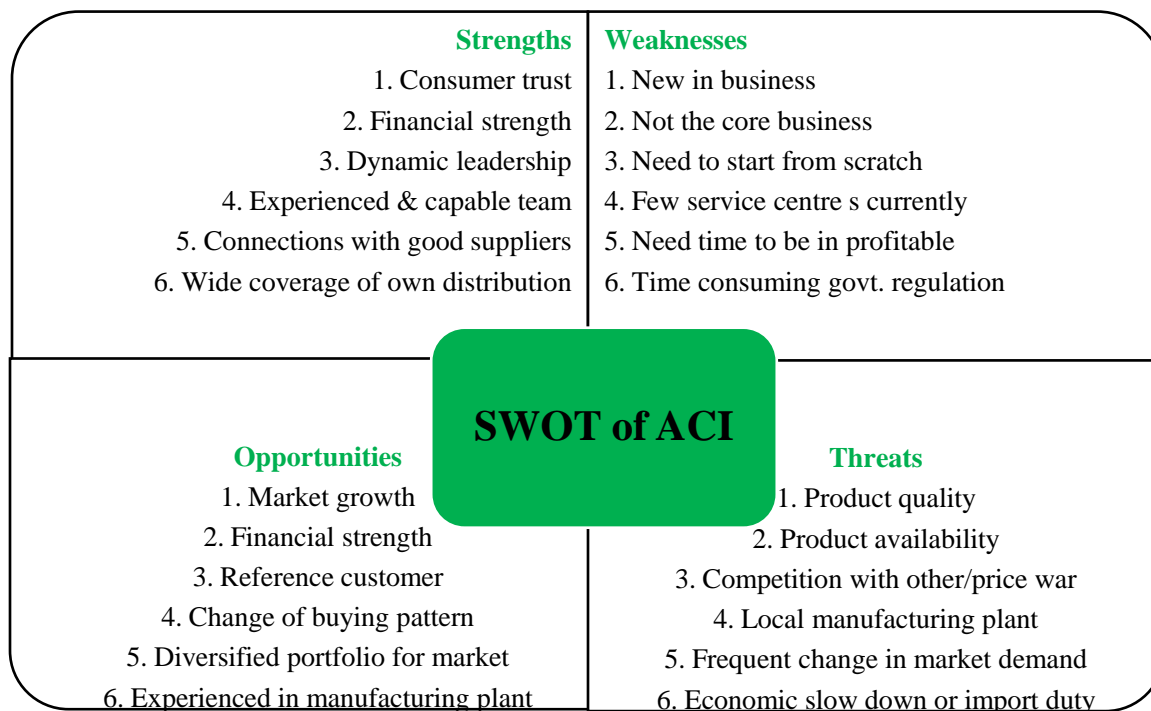


Figure1.2: SWOT Analysis of ACI

1.8 Financial Performance of ACI Limited

The financial performance of ACI is given bellow:

1.8.1 Capital Structure

The major sources of raising company's capital are the Equity (share capital), Long term Liabilities and Bank Loan. The portion of these three categories in raising capital over last five years from 2008 to 2013 in case of Net Sales Income & Profit before Tax, Owners' Equity, and Earnings per Share of ACI are mentioned.

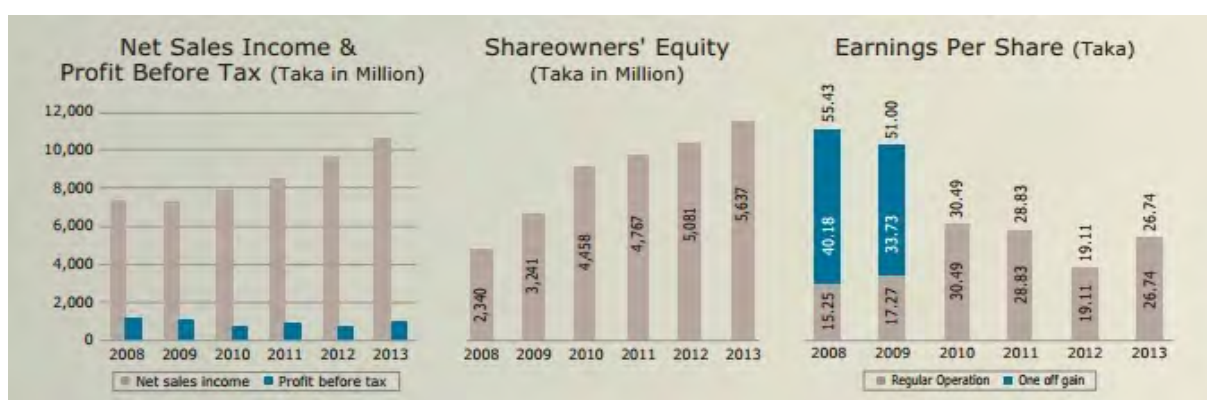


Figure 1.3: Capital Structure (Source: Annual Report- 2013)

1.8.2 Sales Contribution by Business Unit

As per audited accounts for the year ended **31.12.2013**, relative position to total revenue of the products (by Business Unit) is:

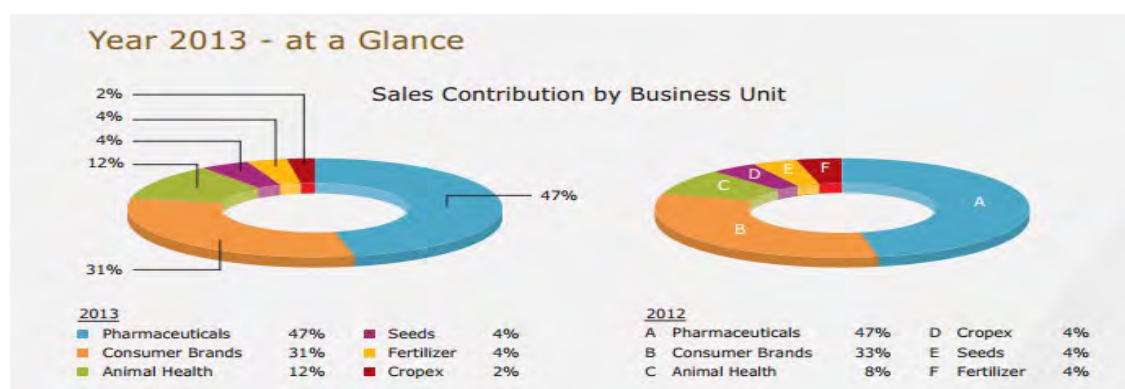


Figure 1.4: Sales Contribution by Business Unit (Source: Annual Report 2013)

It can be seen in the figure 2 that ACI Pharmaceutical is the largest profit gainer for the company. It has a large product line. On the other hand the consumer brands division is at number 02, which accrues 31%. It has got a large product line with Foods, Flour, Electronics, Electrical, and Salt and so on.

1.8.3 Comparison of Turnover and Costs over Last Two Years

Comparison of Turnover & Costs over Last Year				
	2013	%	2012	%
Turnover (Gross)	<u>12,049.25</u>	100	<u>10,927.36</u>	100
Cost of Materials	5,169.74	42.91	5,067.90	46.38
Salaries, Wages & Benefits Paid to Employees	1,444.65	11.99	1,257.32	11.51
Expenses	2,504.71	20.79	2,204.47	20.17
Duties & Taxes Paid to Government Exchequer	2,165.96	17.98	1,852.56	16.95
Profit	764.19	6.34	545.12	4.99
	<u>12,049.25</u>	<u>100.00</u>	<u>10,927.36</u>	<u>100.00</u>

Figure 1.5: Comparison of turnover and costs over 2012-2013

From the report, the continuous progress of net income of the company has been increasing. It demonstrates ACI in a very profitable position in its overall business.

1.9 Experience at ACI Chemicals Ltd.

At the beginning of my internship, I was assigned under a Business Development Manager in the department of Business Research and Development which reports to the strategic apex of the organization. The first week of internship included the facility and factory visit, day long training session on job responsibilities and methods of using ACI resources and technologies to bring out the best out of a graduate who has completed a graduation in Marketing and Finance. The key responsibilities of my tenure were dedicated on the below responsibilities:

- Anticipating, extracting and organizing requirements.
- Assisting with the current business cases, Understanding the Operation concepts.
- Modeling Techniques and methods for efficient business process.
- Analyzing present market practices and applying the best strategy in current setup.

- e) Opportunity analysis, relative data sourcing, data mining and conducting surveys.

During the 3 months internship period, I have been assigned with 2 different business challenges in 2 different industries which lead me to a good grip over the current business scenario at our country and eventually helped me a lot in terms of immense communication and spontaneous presence in the local supplier of paper, glass, construction materials and food industry. Below is the summary of accomplished tasks in different departments:

1.9.1 Paper and Paper Based Products Industries

Project: Local Indenting Opportunity for Paper Pulp

- Analysis of the current business model of paper based manufacturing companies in Bangladesh, Demand and supply of the product as well as the opportunity.
- Understanding of the paper manufacturing processes and steps alongside with regular factory visits, identifying challenges and best practices.
- Identifying key raw material and production procedures, machinery identification etc.
- Determine the sourcing countries and companies for pulp and other raw materials for paper and paper based product manufacturing.
- Build a database of potential local customers and setting appointments with the market leaders.
- Communicate with both the vendors and local customers and arranging a 2-way-conference for negotiating the Indenting Agency Agreement which is currently in process by ACI.
- Competitors Analysis, Budget cost structures and Prepared investment to profit ratios.
- Best practice Identification and Calculated spare resources in-house, to invest on the project.
- Analyzed the legal procedures of the industry, standard manufacturing laws, taxation and duty related issues for Import or paper pulp and export of finished products.
- Visited association for Paper manufacturing industry owners and query for membership procedures.

1.9.2 Building Materials Industry

Project: Machineries Sourcing For Brick Fields

- Collected database of all the brick manufacturers from the Bangladesh Brick Manufacturing Owners' Association and analyzed the yearly production volume, production trend, pricing strategy.
- Frequent visit to the brick factories at Comilla and Ashulia (Savar) has been made to understand the production process and Specific machineries needed for production.
- Prepared database of suppliers in China, Hong Kong, Germany and Vietnam who supplies brick manufacturing machineries like Automated Box Feeder, Grinder, Vacuum Extruder and Automated Molding Machine etc.
- Prepared comparative product specification charts for choosing the best Value-for-Money deals for sourcing the machineries.
- Managed communication with ACI directors and suppliers for negotiating price and after sales services as well as maintenance issues for the targeted products. The communication included day to day query placement, analysis, Skype meetings etc.
- Competitor's analysis, Key Service issues, labor laws for Brick field employees are carefully observed and summarized for easier decision making.
- Proceeded to Insurance company to understand ins and outs of the policies regarding brick field and any kind of accidents that might occur which should be insured.

CHAPTER TWO

2.1 Introduction:

Precise sourcing from suppliers can lead any company to the doorstep of success. For instance, Marks and Spencer is one of the UK's leading retailer, trading in 350 owned stores in the UK, a further 10 in Hong Kong and have franchise partners in 36 countries, in 150 locations only by sourcing products from around 600 garment factories and 500 raw material suppliers in over seventy countries around the world. A successful sourcing strategy from suppliers requires a thorough understanding of a company's business strategy, the resources required to deliver that strategy, the market forces and the unique risks within the company associated with implementing specific approaches. A periodic review of the sourcing strategy ensures achievement of desired results and continued alignment with business objectives. Some of the sourcing strategies that are used in supply chain management today include:

2.1.1 Single sourcing: A method whereby a purchased part is supplied by only one supplier. A JIT manufacturer will frequently have only one supplier for a purchased part so that close relationships can be established with a smaller number of suppliers. These close relationships (and mutual interdependence) foster high quality, reliability, short lead times, and cooperative action.

2.1.2 Multi-sourcing: Procurement of a good or service from more than one independent supplier. Companies may use it sometimes to induce healthy competition between the suppliers in order to achieve higher quality and lower price.

2.1.3 Outsourcing: The process of having suppliers provide goods and services that were previously provided internally. Outsourcing involves substitution—the replacement of internal capacity and production by that of the supplier. Mostly in the absence of physical office at the origin country this process is very effective.

2.1.4 Insourcing: The goods or services are developed internally. This kind of sourcing is considered efficient if the manufacturing company itself is producing a very massive amount of products and constantly need of a lots of raw materials.

Advanced Chemical Industries (ACI) Limited is one of the leading conglomerates in Bangladesh, having diversified business units which have been running precisely because of their successful product and raw material sourcing from the suppliers. Constant market changes have placed an increased pressure for companies to evolve and adapt to potential threats, leading many to turn to the procurement and strategic sourcing functions (both internally and outsourced) to remain competitive and ACI limited has been successfully competent in the market with their effective sourcing strategies.

2.2 Objectives

The broad objective of the report is to gain practical knowledge about the overall selection and retention process of suppliers in ACI Chemicals Limited and analyze the Supplier selection process, Factors related to the suppliers location, Contract Administration, Transportation Channels, Performance Evaluation and the Risk Assessment of ACI Suppliers. In Addition the objective extended to identify different divisions of ACI and the important factors of sourcing from suppliers with special attention to the sourcing process of the organization.

2.3 Limitations of the Study

From the beginning to the end, the study has been conducted with the indentation of marketing a complete and truthful one. However many problems appeared in the way of conducting the study. During the study, it was not possible to visit the whole area covered by the company although the some department information regarding the study have been considered. Many information was not readily available and it took face-to-face numerous conversation that sometimes created mixed arguments. Due to perception of the people, some information are arguable but effort has been made to make a uniformed consistency. Beside as an Intern at ACI Chemicals Limited I was not authorized to contact with the suppliers directly and talk with them which might help me to get some more information.

2.4 Study Methodology

An impeccable internship consists of the systematic procedure from interview to the end and finally preparation of the final report. The data sources were to be identified and collected accurately and are to be classified, analyzed, interpreted & presented in a systemic manner & key points were to be found out. The overall process of methodology of this report has been given as below:

Identifying data sources: Essential data sources, both primary and secondary, were identified that would be needed to carry on the study and complete this report.

2.4.1 Primary Data Sources:

- Face to face conversation with the officers;
 1. Md Mainuddin Patwary, BDM, ACI Chemicals
 2. Syed Golam Mabud Chowdhury, BDM, ACI Chemicals
- Practical desk work;

2.4.2 Secondary Data Sources:

- Company profile of ACI Chemicals Limited.
- Relevant file study as provided by the concerned officers.

2.4.3 Data Collection:

Primary data were collected through direct and face to face interview of the different personnel of ACI.

CHAPTER THREE

ANALYSIS OF THE SUPPLY CHAIN MANAGEMENT OF ACI

3.1 Supplier Selection Process

ACI emphasizes on choosing the right supplier very significantly which involves much more than scanning a series of price lists. It depends on a wide range of factors such as value for money, quality, reliability and service. The importance of these different factors are based on ACI business priorities and strategies. It's the belief of ACI that strategic approach of choosing suppliers can also help to understand how their own potential customers weigh up their purchasing decisions. It help them to decide what they need in a supplier, identify potential suppliers and choose their supplier. Some of the steps of choosing the suppliers in ACI are as follows:

3.1.1 Applying Strategy to Choose for Suppliers

The most effective suppliers are those who offer products or services that match - or exceed - the needs of our business. So in ACI when they are look for suppliers, they make sure that their business needs and buying from a carefully targeted group could have a number of benefits. For example, if they want to cut down the time it takes to serve their customers, they choose suppliers which offer them faster delivery even if their rate is higher than those that compete on price alone.

3.1.2 Characteristics of a Supplier

There are a number of characteristics which are considered strictly in ACI while choosing the supplier. These are discussed as follows

Reliability

The suppliers must be reliable and trustworthy. It is believed that if the suppliers let us down, we may let our customers down.

Quality

The quality of the supplies needs to be consistent. In ACI they believe that the customers associate poor quality with them, not with the suppliers.

Value for money

The lowest price is not always the best value for money. ACI thinks if they want reliability and quality from their suppliers, they will have to decide how much they are willing to pay for their supplies and the balance they want to strike between cost, reliability, quality and service.

Strong service and clear communication

It is a must in ACI for the suppliers to deliver on time, or to be honest and give them plenty of warning if they can't. They believe, the best suppliers will want to talk with them regularly to find out what needs they have and how they can serve them better.

Financial security

According to ACI it's always worth making sure that the supplier has sufficiently strong cash flow to deliver what ACI want, when they need it.

A partnership approach

A strong relationship benefits both sides. ACI want their suppliers to acknowledge how important their business is to them, so they make every effort to provide the best service possible.

3.1.3 Identifying Potential Suppliers

ACI find suppliers through a variety of channels. They prefer to build up a shortlist of possible suppliers through a combination of sources to give them a broader base to choose from. In this purpose the date of the suppliers of the specific products are found in the database of the designated products association or the National Board of revenue. Sometime data vendors are employed to identify the supplier who sale data to ACI with pre-set pricing range. Some other channels are-

Recommendations

Recommendations from friends and business acquaintances are good source of information about suppliers. They are more likely to get an honest assessment of a business' strengths and weaknesses from someone who has used its services.

Directories

If they are looking for a supplier in their local area, they try directories such as Yellow Pages and other search engines.

Trade associations

If their needs are specific to a particular trade or industry, there will probably be a trade association that match them with suitable suppliers.

Business advisors

Local business-support organizations, such as chambers of commerce, often point them in the direction of potential suppliers. They also contact their Strategic Information Centre.

Exhibitions

Exhibitions offer a great opportunity to talk with a number of potential suppliers in the same place at the same time. Before they go to an exhibition, they try to check that the exhibitors are relevant and suitable for their business or not.

Trade press

Trade magazines feature advertisements from potential suppliers. They contact their Strategic Information Centre for a list of specialist trade magazines.

3.1.4 Sourcing of Suppliers

Once they get a clear idea of what they need to buy and identified some potential suppliers, they build a shortlist of sources that meet their needs.

When considering the firms on the shortlist, they try to look for the answers of the following questions:

- Can these suppliers deliver what they want, when they want it?
- Are they financially secure?
- How long have they been established?

- Do they know anyone who has used and can recommend them?
- Are they on any approved supplier lists from trade associations or government?

They do research and try to slim their list down to no more than four or five candidates. It's a waste of time for them and the potential supplier if they approach them when there's little chance of them fulfilling their requirements.

3.1.5 Selecting a Supplier

Once they have a manageable shortlist, they approach the potential suppliers and ask for a written quotation and, if appropriate, a sample. They provide the suppliers with a clear brief summarizing what they require, how frequently they will require it and what level of business hope to place.

Getting a Quotation

ACI always ask potential suppliers to give them a firm price in writing for, e.g. three months. They also ask about discounts for long-term or high-volume contracts. The quotation also considers the SLA agreement and tenure of the contracts.

Comparison of Potential Suppliers

When they get the quotation, they compare the potential suppliers in terms of what matters most to them. For example, the quality of their product or service may be most important, while their location may not matter. Price is important, but it is not be the only reason they choose a supplier. They are confident that their supplier can make a sufficient margin at the price quoted for the business to be commercially viable.

They always check and make sure that the suppliers they employ are the ones that do the work. Some suppliers may outsource work to subcontractors, in which case they also investigate the subcontractor to determine.

Wherever possible ACI utilizes the idea to meet a potential supplier face to face and see how their business operates. Understanding how the supplier works give them a better

sense of how it benefit their business as well creates an environment of trust and commitment.

Negotiation of Terms and Conditions

Once they settle on the suppliers they like to work with, they move on to negotiating terms and conditions and drawing up a contract. ACI maintain a guideline of their own on how to negotiate the right deal with suppliers.

Knowing Needs

ACI employees always make sure that the supplier know what they need to deliver. They understand the difference to their business between a strategic supplier, who provides goods or services that are essential to their business - such as high-value raw materials - and non-strategic suppliers who provide low-value supplies such as office stationery.

Market Research

Choosing the right suppliers is essential for their business so they never try to save time by buying from the first supplier they find that may be suitable. People or other businesses with first-hand experience of suppliers can give useful advices. Therefore ACI limited also focuses on the information and recommendations from other companies.

Credit Check of Potential Suppliers

ACI makes sure their supplier has sufficiently strong cash flow to deliver what they want and also with them when they need them most. Also they need to evaluate whether they have considerable insurance for any kind of debt as well as good credit rating form the renowned credit rating organizations.

Price vs. Quality Consideration

Other factors are equally important when choosing a supplier - reliability and speed, for example. The company believes if they buy cheaply but persistently let down their customers as a result, they'll start to look elsewhere. So quality of the raw materials as well as ensuring finished goods are important for consideration.

Service Level Agreement Assurance

ACI limited agrees on service levels before they start trading with their supplier so that they know what to expect from them. Their strategy is how to manage their suppliers.

Since it is easier for ACI to manage and probably more cost-effective if they limit the number of sources they buy from. But they don't have just a single supplier. It's always worth having an alternative supply source ready to help in difficult times and also for their business' success.

Therefore the overall supplier selection process of ACI limited include the following steps:

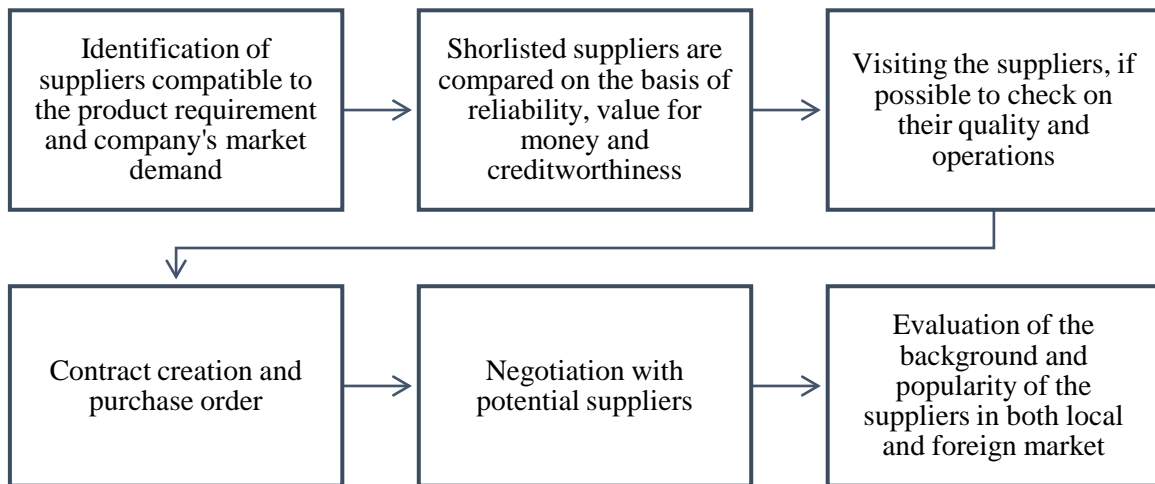


Figure 3.1: Overall supplier selection process of ACI

3.1.6 Location Wise Supplier Sorting

There are various factors related to the Suppliers Location which are significantly considered in ACI Limited. Some of these factors are-

- Communication- communication flexibility is always considered by ACI. Site visiting to product supply all have to gone through a communication process. Time deviation, distance, Hassel free distribution channel etc. are affecting factors of communication. Time of dealing, shipment, communication over phone, mailing etc. are scrutinized very seriously by ACI.

- Price-cost of production, distribution, tariff, freight charge etc.
- Political stability-relation with our country, taxes, economic stability are strictly considered in ACI. For example they will not do business with Israel, Pakistan and Italy etc.
- Geographic location plays an important factor in case of choosing suppliers.
- Lead time- transporting time and feasibility of transportation will determine the actual lead time and as well as the ordering period. Therefore ACI is highly serious about lead time of the suppliers.
- Competition- monopoly business of any particular country will charge more in exporting their product. ACI evaluate such location which have a certain level of completion among other manufacturing companies

3.2 Performance Evaluation Process of ACI's Suppliers

The main objective of the ACI's supplier evaluation process is to reduce purchase risk and maximize the overall value of the purchaser. It typically involves evaluating, at a minimum, supplier quality, cost competitiveness, potential delivery performance and technological capability. Some of the other criteria used in the preliminary evaluation of ACI's suppliers include financial risk analysis, evaluation of previous performance, and evaluation of supplier provided information.

3.2.1 Elements of Supplier Performance

There are three different aspects to the monitoring of supplier performance:

a. Gathering factual, and therefore objective information about their performance such as lead-times from order, quality standards being met, pricing compliance and whatever else is laid out in the contract. This type of information can usually be obtained from IT systems within the organization in the form of management information. As with all of these aspects, it is good practice to be as consistent as possible in the approach to the performance monitoring.

b.Obtaining the experiences of the customers (for example, in respect of service, attitude and response rates). This should be as objective as possible, although in some cases it may, inevitably, be subjective. One way to collect information on performance is by individual interview against a defined set of questions. This can be face-to-face or on the phone but needs to be interactive so that the interviewer can explore the background when necessary. Sometimes commitment is required from customers, such as engineers in the field, to keep records of their experiences of working with a supplier in order that objective factual data can be used. Another way is to undertake customer satisfaction surveys, which can be

c. The supplier's experience of working with the buying organization must be considered in the evaluation, as it might be the case that they are facing unnecessary obstacles or deal-in with difficult people.

3.2.2 Process of Evaluation at ACI for Supplier's Performance

ACI supplier performance evaluation process involves evaluating the supplier's overall quality status, as well as evaluating the quality of each material or service the Company wishes to purchase from that supplier.

ACI Supplier evaluation may consist of any combination of the following criteria, as specified for each purchased item:

- Registration or evidence of compliance with a specified quality standard by a recognized authority.
- an on-site assessment and evaluation of the supplier's capability and/or quality system
- records of past achievement
- evaluation of product samples
- test and inspection results
- published experience of other users
- design verification

- cost
- on-time delivery
- Demonstrated or verified ability to meet all specified requirements, including quality system, quality assurance, and customer requirements.

3.2.2.1 Establish Performance Indicators

ACI creates specific performance criteria for tracking and evaluating the suppliers and vendors on a regular basis—monthly, quarterly, and/or annually. Considerations include size of the company, number of certifications, quality management systems, complaint history, and financial stability. Its processes and needs will dictate what criteria will apply. For a business owner who is looking for a shipping company, the biggest concerns might revolve around what is that supplier's on time delivery track record, how many trucks they own, how many accidents have their drivers reported, and what certifications do they hold.

3.2.2.2 Classify Multiple Suppliers and Vendors

ACI has a huge number of suppliers and vendors and intend to craft a survey to evaluate them, it will be cumbersome to apply the same survey to each and every one. It is better to separate suppliers into levels (1, 2, and 3) based on how critical they are. Decide the classification that is best for and evaluate suppliers according to the effect they have on their product or service in order of importance. Suppliers are classified as A, B, C and D class which denotes the level of efficiency.

3.2.2.3 Devise an Evaluation Method

There are common techniques for rating a supplier's performance including evaluation forms, surveys, system metrics, and software applications. ACI tracks vendor performance using a customized system they created via third party

Enterprise Solutions accounting software, the Manufacturing & Wholesale edition. ACI can craft a survey where they ask their own employees to answer questions and to rate suppliers and vendors. They can review how many corrective actions they had to issue a supplier or vendor, how many products they had to scrap or return because the supplier or vendor failed to meet specifications, or how many customer complaints they received due to a bad part or service from a vendor. They also can monitor suppliers and vendors by doing an audit periodically. The bottom line is that they need to generate measurements or reports at the onset of the purchase and throughout the course of the relationship.

3.2.2.4 Identification of Responsibility

Once ACI establish the criteria for evaluating suppliers and vendors, they decide who in their company will be responsible for reviewing the data. It depends on how much resources they have to dedicate to evaluating their suppliers. They may want to assign one person or a team with this task.' For instance, selecting and evaluating ClassA suppliers and vendors, might require the chief financial officer or someone from the finance department along with the president and representatives from purchasing, operations, and engineering or IT. With Class B and C suppliers and vendors, it may be the purchasing or procurement officer who approves the supplier or vendor list and monitors performance.

3.2.2.5 Maintain Good Relationships

ACI Considerstheir suppliers and vendors as part of the team and treat them as such with continuous communication. Technology is great but they don't overlook the personal touch of a phone conversation or face to face meetings. ACI also avoid supplier and vendor conflicts by paying on time or at least honestly addressing late payment issues and talking with their supplier or vendor about it.

3.2.2.6 Decide When to Issue a Red Flag

ACI periodically monitors a supplier's performance, praise them, show appreciation for a job well done; give a supplier additional business because of excellent performance. They can drop a supplier for poor performance but strategically it is better to retain their vendors and not to flip around all of the time to replace them. By giving a warning, they give the supplier or vendor an opportunity to correct the problem. This process is not just about reviewing their suppliers but helping them to improve their performance.

3.2.3 Evaluation Time Frame and Evaluating Factors

There are a number of key factors in ACI which can be used to evaluate the supplier performance and which can be used as a yardstick for determining whether good practice is being achieved in specific situations. Generally in every 6 months, the management needs the report on the performance of the existing supply chain partners, rate status and evaluate the need of new partners in the chain. Alongside with these the below list show some examples of these 'hard' issue key performance indicators (together with their sub-categories) are:

- Product quality
- MTBF (Mean Time between Failures)
- Percentage of incoming rejects (delivery accuracy)
- Warranty claims
- Service Quality
- Customer service response time
- On time delivery performance against agreed delivery lead times
- Relationship/Account Management
- Accessibility and responsiveness of account management
- Costs are maintained or reduced
- Monitoring the Performance of Suppliers
- Providing corrective measures
- Control risk factors and forecasting future challenges
- Reducing wastes and achieving Six Sigma

3.2.4 Evaluating the performance of key suppliers

Key suppliers of high value and high risk goods and services (outsourced service providers, for instance) require close performance and relationship monitoring and this is where most resources should be employed. This may well involve monthly meetings where performance is discussed, issues resolved and new targets set as appropriate. Key supplier failure can bring significant losses to a business, and therefore it is important to ensure that the contract contains suitably robust exit clauses and contingency plans. The situation may, however, be somewhat different for outsourced services, such as cleaning or catering where the meeting should be held where it facilitates inspection of the problem areas. Performance evaluating is not suitable for all suppliers; however it is good practice to include supplier measurement and monitoring in all contracts so that quality, price, delivery and service levels can be monitored to ensure contract performance and compliance.

3.2.5 Responsibilities, Remedies and Results for Evaluation

In the event that a supplier consistently fails to meet the requirements of the contract (and does not respond to feedback or suggestions) then the remedies set out in the system must be brought into play. Since performance evaluating should lead to continual improvement from suppliers, most suppliers would expect a long-term business relationship with the client. This may involve contracts of several years duration, with options to extend for further periods, if the supplier's performance is satisfactory.

Although evaluating performance of suppliers will ideally be directed and managed by the authority, it need not necessarily be carried out by them. In the event that the monitoring process is managed outside the authority function, it is essential to ensure the staff have sufficient authority and training to enable them to carry out their role effectively.

However, it to be of critical importance that whoever carries out performance evaluating (and especially the review meeting with suppliers) has the correct skills and the full support of the

function. This is particularly important when the payment mechanism in the contractual arrangement is contingent on supplier performance measures. It should be borne in mind that it is often the technical experts, who do not understand or appreciate the commercial nuances, and therefore they may need encouragement and support to carry out the evaluating process effectively. To monitor the performance of key suppliers in terms of their growth, market share and financial standing so that the buyer remains aware of the profile of important suppliers within their market sectors. In the case of particularly key suppliers it is advisable to hold regular meetings at both operational and strategic levels to support the relationships and explore future market opportunities.

3.2.6 Risk Assessment of ACI's Supplier

ACI's key strength is identifying the greatest opportunities for improvement in ACI supply chain, and target investments for maximum impact. Supply lines today are longer, and more complex than ever, and it is vital to proactively identify at-risk opportunities in ACI supplier base to prevent costly delays and disruptions with global capabilities, extensive industry experience, and multi-cultural expertise.

Qualification Assessments

ACI pre-qualify their new potential partners to verify they meet specific requirements for proper parameters, documentation and controls. They evaluate and score suppliers to their personalized criteria to ensure long term relationships and reduce turnover. Observations made during assessments are documented and then analyzed to support their sourcing decisions.

Upgrade Assessments

ACI works to understand where system failures are impacting critical aspects of cost, quality, delivery and safety. They quantify and measure at-risk opportunities impacting their bottom line. Utilizing a phase approach, they focus on key factors not meeting their

expectations as they relate to their purchasing agreement, supplier manual and requirements, process/part approval methods, and regulatory requirements.

During on-site assessments, they create a process flow diagram encompassing process details from incoming parts to outgoing product to related failure mode at-risk opportunities. ACI identifies and monitors root cause factors impacting each failure; they also monitor trends and analysis that are measured against baseline data.

Compliance Assessments

ACI assess their suppliers according to their specifications. The competitive advantage is that they take the results one step further than simply showing the results of supplier assessments. ACI industry leading systems provide an "Effectiveness Rating Scorecard" (ERS) that cross-references major non-compliances against the location's effectiveness, providing further insight into the overall strength of the system. These services ensure that products, processes and documents meet their requirements. They monitor the results, identifying major non-compliances as well as providing site effectiveness ratings and opportunities for improvement.

Natural disasters, extreme weather, and human-driven factors such as political instability all have the potential to significantly affect the operations of organizations and their suppliers. Risk may be generated as a result of risk 'drivers' that are either internal or external to the company.

External Drivers

Demand Risks

The market demand is continuously changing and people always jump on to take the new opportunities. So understanding the proper demand and deliver the product accordingly is very important for ACI indenters. The risk is associated with unpredictable or misunderstood customer or end-customer demand. Generally in a stable situation a production planner can easily forecast the demand of the consumers just by following the simple trend of the sales. But in a developing country like us it's very complex to forecast

the continuously changing demand trend of the consumers. That's why ACI has a diverse group of same kind of products and planned their production in such a way that will drive its production method with some common materials in terms which will benefit the organization with smoother flow of inventory.

Supply Risks

Supply risk is caused by any interruptions to the flow of product, whether raw material or parts, within your supply chain. Therefore, this risk is associated with a company's suppliers, or supplier's suppliers being unable to deliver the materials the company needs to effectively meet its production requirements/demand forecasts. Supply risks arises for a poor infrastructure in the current business condition. Also its to note that the supply of raw materials from a supplier in a different country has a lots of risk factors like increase duty and tax charges, laws and regulations of the exporting and importing countries as well as the long period of transport in the sea for 20-25 days can face any kind of accidents which will cost the business a lot of troubles.

Environmental Risks

From the company's perspective environmental risk is the risk which is uncontrollable events. Examples would include port and depot blockades, closure of an entire industrial area due to fire or chemical spillage, events such as earthquake, cyclone, volcanic or terrorist activity. For ACI, flood has been a sought risk so far as it hampers the production of the raw materials for the spices line as well as the food grain lines.

Political Risks

Political and legal factors such as changing legislation and policies, changing government can create big impact on the business. Since 2000, the political situation in our country is not very stable and government is changing the policies of imports and exports regularly for which the manufacturers on a huge scale facing a lot of troubles to run operations efficiently.

Shareholder's Intervention

Shareholders are continuously pushing the business managers for profit share which limits the further investment of the profit to more growth for the organization. This eventually leads to the question of short time profit enlargement or survival for long time with marginal profit. This kind of dilemma is a crucial risks for ACI as sometimes due to stakeholder's own profit, it might lose bigger opportunity for attractive growth.

Competitors Risks

Competition is one of the vital factors of free market economy. Being the most quality provider in the market, a competitor can easily take over the existing market share by developing new products, achieving strategic business processes and renovation on supply chain management.

Internal Risk

Process Risk

Processes are the sequences of value-adding and managerial activities undertaken by the company. When any problem or disruption occurs in this sequence is known as process risk. It is mainly caused by changes in key personnel, management, reporting structures or business processes, such as the way purchasers communicate to suppliers and customers.

Control Risk

Controls are the assumptions, rules, systems and procedures that govern how an organization exerts control over the processes. In terms of the supply chain they may be order quantities, batch sizes, safety stock policies etc. Control risk is therefore the risk arising from the application or misapplication of these rules. In ACI, being a local conglomerates, there are very narrowly controlled structure and the decision making takes a lot of times for bureaucracy.

Organizational Structure

Organizational structure plays an important role of the smooth flow of actions of the supply chain partners. Depending on the hierarchy, position, responsibilities and authorization, the synergy and cohesiveness of the chain is achieved. Sometimes the challenge is faced by ACI as because of the rotation of the employees, turnover of the employees and also the common problem of local multinationals like inefficient recruitments and massive responsibility on individuals.

Innovation

It's really necessary for market leaders to promote and motivate the employees for inventing their some time to innovate and renovate the old fashioned ways of doing the works so they can secure the leading position with substantial growth. Innovation leads to more efficient way to run the operation processes as well as sometimes create breakthroughs. That's why important of research and development is necessary for all the strategic business units.

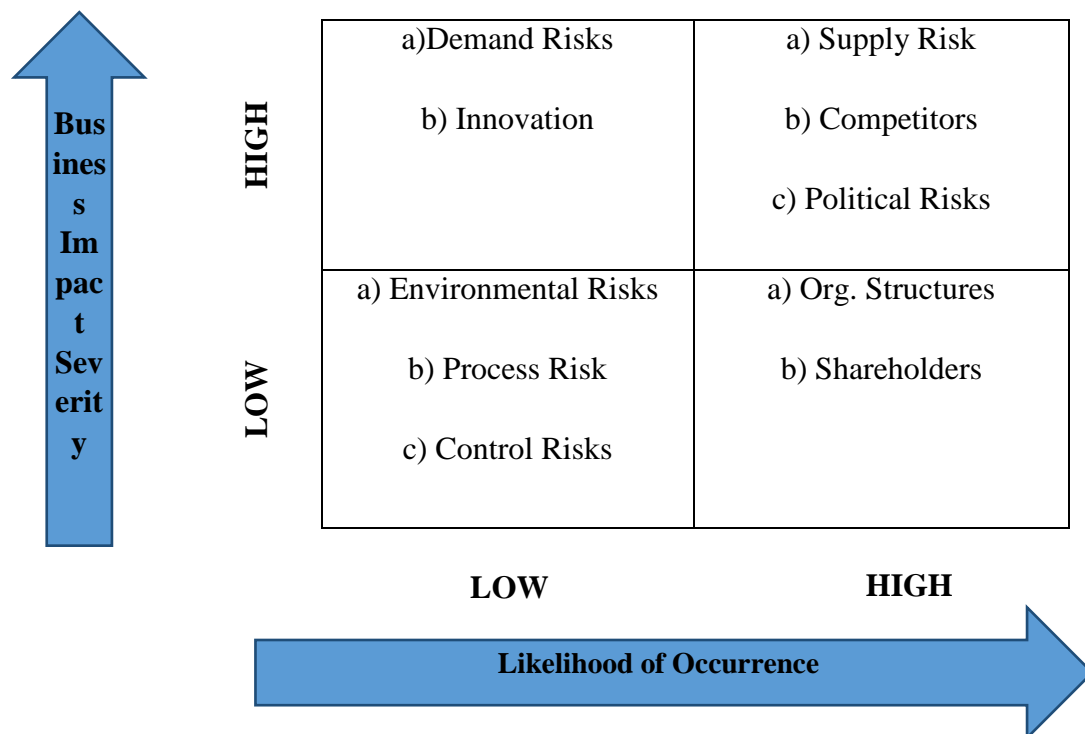


Figure3.2: Risk Assessment Matrix for ACI

3.3 Contract Agreement for New Suppliers

New Supplier selection is the process by which the buyer identifies, evaluates, and contracts with suppliers. The main objective of supply contracts is to ensure the availability of the right quantity and quality of goods and services at the right time and at the lowest possible cost to sustain in the competitive market.

The major steps involved in new supplier selection are;

Identifying the Supplier

To survive in the intensely competitive global economy, it is often critically important to not only develop existing suppliers but also to discover new suppliers; to sustain the competitive environment. For this purpose several factors make new suppliers important over the existing one. It is possible that new suppliers are may be superior in some way to a firm's existing suppliers. For example, a new supplier may have developed a new production technology or streamlined process which allows it to significantly reduce its production costs relative to pre-dominate production technology or processes. Or, a new supplier may have a structural cost advantage over existing suppliers, for example, due to low labor costs in its home country. Again, the buyer may need additional suppliers simply to drive competition, reduce supply disruption risks, or meet other business objectives such as supplier diversity.

Suppliers Screening Process

To avoid the dismal outcomes of supplier non-performance, buyers typically take proactive steps to verify a supplier's qualifications prior to awarding them a contract. Such as; reference checking, financial status checking, surge capacity availability, indications of suppliers' quality, ability to meet specifications etc.

Suppliers Information

Next, the buyer must evaluate these suppliers. This process is initiated when the buyer formally solicits information from suppliers. Once the buyer has identified potential suppliers, the next step in supplier selection is to formally request that the suppliers provide information about their goods or services. While there is no agreed-upon

terminology, generally the buyer makes one of three types of information requests to suppliers; i) request for information ii) request for proposal iii) request for quote

3.3.1 Contract Terms

Depending on the information received from suppliers via the requests must be translated into formal contractual terms before signing the contract. A contract with a supplier specifies what the supplier should do and how they will be paid by the buyer. At the highest possible level, contract terms relate to either payment terms or how the contract will be executed; non-payment terms. . A few common added features are for example, long-term or short-term contracts, lead time specifications, fixed cost or cost plus contracts, value for money, delivery, after-sales service and maintenance arrangements etc.

In a fixed-cost contract, the price term specifies what the supplier will be paid regardless of the actual cost to execute its contractual obligations. Again in a cost plus contract, a formula is specified which determines how much the supplier will be paid; for example, under a cost-plus contract the supplier could receive a fixed percentage of the total cost incurred, or simply receive payments for time and materials.

Again the contract can specify all kinds of details related to how the contract will be executed, for instance, delivery quantities, delivery frequencies, delivery locations, service level, quality level, technical specifications, duration of the contract, etc.

There could be other added commitments like below:

- a. **Minimum quantity commitments:**that addresses two different issues, those are:
 - i. It gives the buyer some flexibility to change orders and to adjust to changing market conditions, but at the same time it limits the buyer's flexibility to change order sizes drastically, which helps to avoid increases in the production cost for the supplier.
 - ii. It provides incentives to suppliers to build capacity even when the demand is uncertain, and it shares the risk of investing in capacity between the supplier and the buyers. Then the

- b. Periodical Commitments and Flexibility:** which states that buyers still have the flexibility to change their previously made orders to better meet the actual demand. It is clear that buyers would like the flexibility to change previously made orders at any time.
- c. Fixed Delivery Contract:** here the buyer is committed to purchase the same quantity at a cost per unit in every period. The buyers have upward flexibility to order more than the quantity but they have to pay a premium for the additional quantity.

3.3.2 Negotiation Process

Contracts can specify any number of payment and non-payment arrangements when making contract award decisions the buyer considers each supplier's qualifications as well as the contract terms they offer. A supplier's qualifications are generally considered exogenous, for example, a supplier's reputation is based on historical performance and is not alterable in the short term. Contract terms, on the other hand, can be "negotiable" between the buyer and supplier. In a negotiation the buyer attempts induce favorable terms from suppliers, and likewise the suppliers attempt to induce favorable terms from the buyer.

For better or worse, negotiations often are viewed as zero-sum games where the buyer gains what the supplier gives up. An extreme example of this is the "take it or leave it" offer approach whereby a powerful buyer essentially dictates the terms to the suppliers. For instance, the buyer might demand a certain price and simply refuse to consider the supplier unless they agree to this price.

Competitive tendering is an alternative way to extract concessions from suppliers whereby suppliers are played off one another. Typically, suppliers simultaneously submit bids (in response to an RFP or RFQ). Competitive tendering approaches differ in the amount of visibility that suppliers have regarding competitors' bids. It is also possible that the buyer can utilize neither competition nor take-it-or-leave it offers. Instead, the buyer and a single supplier might bargain in some general and unstructured way. This keeps the stakes really very high and a very high compliance is maintained so that all the terms and conditions are followed strictly according to service level agreements.

3.3.3 Contract Awarding

Once the buyer has a sound methodology for evaluating suppliers, the process of contract awarding can begin. During this phase the buyer determines which supplier or suppliers to award a contract to. Supplier evaluation is a key ingredient in this process, but award decisions can hinge on more than just how the buyer evaluates the supplier.

Many contracts specify the provision of goods over an extended duration of time, ranging from weeks to years. Monitoring supplier performance during the life of the contract has several aims. For example, it supports quality if the buyer inspects incoming goods to ensure they conform to quality specifications. Monitoring also supports cost containment: if there is a problem with quality, it can be identified and charged back to supplier. For supplier selection itself, however, monitoring is most important in so far as it helps the buyer make more informed supplier selections in the future.

3.3.4 Contract Extension and Contract Renewal with Suppliers

Efficient contract management requires timely planning for contract expiry. Before a contract expires, buyers need to determine what approach will be obtained the best value for money: extending or renewing the contract, or re-approaching the market under a new procurement process.

A contract extension is when an existing contract is extended for a period of time, when the buyer is satisfied and the supplier's performance has met expectations. At the time when a contract is extended, other terms might also be varied; such as pricing. Before deciding to extend a contract buyer should check whether there are any planned procurement activities that might influence whether to extend the contract, or for how long.

A renewal of a contract is when an existing contract comes to an end and the parties agree to enter into a new contract usually for the same or very similar services. It can be done when the contract renewal is supported by business needs and supply market analysis for example; reasonable price and competition, the supplier's performance is satisfactory, has met

expectations, and that the customer is satisfied, and better value for money would not be obtained by re-approaching the market.

3.4 Maintaining a healthy relationship with the suppliers

A healthy relationship with suppliers is a vital part of business success. To maintain it the following measures can be adopted:

- a.** Always pay on time. Buyers and suppliers can negotiate for favorable payment terms before placing an order, but once the order is placed, don't renege or attempt to change the rules.
- b.** Provide adequate lead times. Try to give suppliers as much lead time as possible on placed orders. Unless there's a good competitive reason not to, share with them an honest projection of needs, and keep them abreast of any significant changes in that estimation.
- c.** Personalize the relationship. Visiting suppliers' offices regularly can create a sound relationship among the two parties.
- d.** Share information. Keep the good suppliers aware of what's going on in the company. Tell them about changes in new products, special promotions and so on.

3.5 Transportation Facility Consideration for Supply Chain

ACI is continuously thriving to expand their businesses to contribute in advancing the growth of sales as well as improve the possible methods to include all customers in various geographical regions both by the high population growth. However, globalization has changed everything so that the companies like ACI has paid to spend more money on transportation to reduce the time to ensure the delivery of products to the consumers of course, besides compliance with new government regulations. Evaluation of technologies, availability of information and enhanced logistics solution always fuels the growth in this sector by providing a choice of best transportation method. This also helps the brand to deliver the Right product at the Right Time to the Right Customer at the Right Place. Alongside with this, it is also important to know that high

speed transportation facility will give the company more responsiveness but will not necessarily be cost efficient (Chopra & Meindl, Supply Chain Management 3rd Edition, 2007).

3.5.1 Consideration for Transportation Services

There are several factors that influences the decision making process of ACI to choose their best transportation services. Mainly this consideration concerns about time frames for pick-up and delivery, fuel and maintenance cost for transportation services, coverage area and overall effectiveness of the investment. Mostly there are 02 important factors that is considered regarding the decision:

- a) **Carrier:** This involves the party who moves or transport the product from a origin location to the customer delivery points. In this regard, we choose the carrier on the basis of Vehicle related costs, Fixed Operating cost & Trip related costs. Vehicles related costs often includes fuel costs, fabrication costs for specific materials etc. Fixed operation costs include the Depreciations, Interest on Loans, Maintenance costs etc.
- b) **Shipper:** Shipper refers the sources from which we are collecting our resources. The decision of choosing the right kind of transportation service depends on the product type, storage facilities and also the nature of the inventory itself. Sometimes foreign suppliers prefer to choose their own transportation methods for delivering raw materials by sea or air to our factories. Location of the shipper is important too as sometimes we have to provide transportation services to the nearest port from shipper's plant to catch the desired vessel to import that product.

3.5.2 Role of the Freight Forwarders

Being one of the biggest conglomerate of Bangladesh, regretfully ACI doesn't have any in-house freight forwarding services to cater its own business. For freight forwarding service we depend on third parties who help us by providing clear and forwarding services in Chittagong Sea port, ICD Kamalapur and Dhaka Airport. The freight forwarders provide us good rate services by

using their agency network all over the world in terms of sea and air-freight. Mostly they provide us with three types of services:

- a) **FOB Shipment:** Commonly known as **FREIGHT COLLECT/COLLECT** shipments where the Consignee (ACI) has to pay all the costing after **FREIGHT on BOARD**. This includes Freight Charge, Duty and Taxes, C&F Charges and other detention and demurrage charges. This kind of shipments provides good control of the shipment as we can choose which carrier we can choose and which kind of services (Direct or Indirect) we prefer, the transshipment time etc.
- b) **CFR Shipment:** This kind of shipment is known as **FREIGHT PREPAID/PREPAID** shipments. Shipper takes the responsibility for paying every cost related to the shipments and any kind of demurrage is borne by shipper.
- c) **Ex-Work Shipment:** Sometimes the suppliers are based on geographically distanced places compare to the Origin port. On that time, the Shipper needs trucking facility or any other kind of facility that may require to ensure proper delivery to the origin port are knows as EX-Work shipments and same as FOB shipments, consignee pays the charges for this kind or shipment.

3.5.3 Transportation Modes

Depending on the time constraints and nature of the product we use different kinds of transportation modes and this includes the below:

- a) **Air:** Mostly air shipments used for very time sensitive products like perishable items, raw materials that is delicate to external environment, materials that is needed to be urgently delivered. Most air shipments will take from one to three days to reach from supplier to Dhaka airport. The air shipments are costly too but delivers the good with outmost care and in the right time. The HBL and other important documents are reached to airport with the carrier that is carrying the product. So it's take a very short time to complete the delivery process with less complexity. As ACI warehouses are near airport it's also easier for delivering the goods to the warehouse directly with short time. It's very important to mention that ACI only use air shipments for import shipments and use the carrier that is

run by third parties and also resource from freight forwarders agent. Below issues are considered for choosing the air as transportation methods:

- i. **Location/Number of HUBs:** Considering the origin port, we have to consider how many hubs the airline is going to touch before it reaches Dhaka Airport. For example, if we use Cathay Pacific Airlines to deliver the shipped out goods to Dhaka, the flight will first reach its hub at Hong Kong International Airport and then it will fly again to Dhaka. If the number of HUBs increases, it increases the chance of lost/offload goods or take more time to reach destination. More HUBs also reduce the per KG cost of airfreight.
 - ii. **Schedule Optimization:** As mentioned before, only most time sensitive shipments are done via Air, it's important to check the production schedule and manage accordingly so that the raw materials reaches on time. For example, cotton is a very time sensitive raw material as if reached late, the production of threads as well as other production procedures will be seriously hampered which might delay the shelf life as well as it also cost a delayed trend participation and the current trend even might move on to a new craze.
 - iii. **Yield Management:** It is a variable pricing strategy that is based on the understanding or forecasting or influencing consumer behavior in order to maximize revenue by using a fixed resource. In this case, we prioritize the most sensitive yet the exclusive products raw materials via air shipments.
- b) **Sea:** This is the most common form of transport both for exporting finished products to the foreign markets and for importing the raw materials to Bangladesh for fueling the manufacturing process. The sea shipments are planned on an interval of such a way that the routing order to the suppliers ensure to present the cargos to the facility by 15 to 20 days. This process has some important benefits like less storage cost, JIT (Just In Time) advantage, Credit facilities and control over cash outflow etc. Considering the below details we choose the products to be shipped out via sea:
- i. **Geographical Areas:** Having a strategic sea port at Chittagong, it's a very cost effective method for importing raw materials as well as finished

products from India, Pakistan, China and Hong Kong. The sea freight is quite affordable compare to the airfreight and almost every supplier has easy access to their nearest seaport.

- ii. **Quantity and Volume:**The sea transportation is used to mostly cover large amount of quantity. For example a 20'GP container can hold approximately 24 CBM of goods and 40'GP and 40'HQ containers can take average of 45 to 63 CBM covering to a maximum of 30,000 KGs.
 - iii. **Cost and Transshipment Time:**Sea freight is very affordable considering its cost as average container costs range from USD 650 to USD 1200/Container. The average transshipment time taken to deliver a goods from the usual suppliers ranges from 12-20 days.
 - iv. **Storage & Warehousing Savings:**Sea freight comes with a 4 days free time at Chittagong Port and also the carrier provided 10-14 working days free time to store the products at the carrier's warehouse. On average ACI can easily take the advantage of free warehouse facilities for the imported container for at least 14 days. This helps the management of cash flow and also helps if the shipments are delayed or even early.
 - v. **Types of Products:**The products that are imported via sea are Fabrics, threads, raw materials for grain based foods, Spices, Electronic items, Production heavy machineries, Chemicals etc.
- c) **Rail:** The rail transportation is used for the shipments that has reached at Chittagong Sea port to deliver them at Dhaka and onwards. Mostly the shipping carrier send the containers via rail to ICD Kamalapur Dhaka and ACI has to take care of the further costs to deliver those containers to the other major destinations. Rail transport is a cheap transport too but due to port congestion or political reasons sometimes rail schedules delays too.
- d) **Roads:** Transportation via roads are the most frequent and most important for ACI as this also ensures the product to reach to the distributors as well as retail shelves for the easy access for consumers. ACI maintains a huge fleet of in-house delivery system which includes numerous numbers of minivan, refrigeration vans, pickups and also paddled vehicles. ACI also has contract with third parties for ensuring truck and lorry services if

required. Also ACI does some import from India via trucking. The roads transports are used to deliver the finished products to the distributor's warehouse, sometimes in the retail outlets directly. There are separate transportation system dedicated to **SHWAPNO** super stores which includes specific vans for different products like fish and perishables, dry foods, clothing etc.

3.5.6 Risk Management in Transportation Services

Transportation involves a lot of risks that might cost a huge loss for a manufacturing company like ACI. The three main risks are as below:

- a) Delayed Shipments.
- b) Disruptions on Supply Chain Operation.
- c) Risk related to Hazardous Materials.

To decrease the risks some steps are always maintains as per the compliance strictly maintained by the commercial departments. Every shipment is insured by the world class insurance company and the company choose certified supply chain professionals to handle the goods in the time of transportation. Hazardous or sophisticated materials are containerized with special care and specific types of containers or packaging system so that no tear or break happens. Every shipment confirmation comes with a promised transshipment time as well as the freight forwarders, distributors and sales representatives are routinely inquired for a real time update of the product flow. This is automated by a powerful ERP software which is managed by a group of capable data processors. Compliance and Global Business development team with a regular interval checks the performance of the supply chain is playing a great role to provide sufficient margins from the risk by evaluating current practice and taking corrective measures too.

CHAPTER FOUR

Recommendations

Supply chain management is a very diverse and spontaneous challenge for any organization as company's overall performance and manufacturing efficiency mostly depends on the punctual flow of raw materials as well as proper distribution of the finished products to the consumers. Alongside with the other competitors in the market, ACI have also enabled themselves to resort for third party logistics supports which is providing a very good economy of scale as well as have some major drawbacks too. Studying the process of ACI supply chain, I would like to recommend the below details which will definitely help to achieve more efficiency with simpler approach:

- a) **Get Rid of Spreadsheets:** Most of the tracking done in the supply chain network in our office is done by old fashioned excel and spreadsheet tools. Its really necessary to move on to an automated tool which will help the executive to control the function more easily. Progressive Gant Chart is helpful in this regards.
- b) **Identifying Innovative Partners:** More research should be conducted on a regular basis so that we can identify the supplier chain partners who can add more value in the process in terms of innovative strategy. This kind of approach will open up new opportunities to reduce the cost and wastes.
- c) **Segmentation of Supply Base:** The supply chain should be renovated and restructured so that different products are sourced by different channels. This will reduce the risk of delay and as well as risk of transport would be reduced to for the sophisticated materials. This will also help ACI to judge which supply chain partner is more reliable and cost-effective.
- d) **Create Model KPI:** ACI currently doesn't have any Key Performance Indicators (KPI) for evaluating the performance its SCM. So it's a must to establish a KPI to ensure visible performance growth and locating the gaps to overcome the challenged targets.
- e) **Training and Development:** There is a scarcity of professional supply chain personals and ACI asks for other department's employees to watch over the process alongside with their primary work. This enlargement of duty surely decrease the cost

in term of salary but this doesn't ensure efficiency as professional will create more value and technical learnings in the system. So more training and development is needed to bring out the best form the existing employees in terms of freight system, transportation network and legal issues etc.

- f) Technological Support:** ACI should develop a tailored ERP software for managing the supply chain which will automate the process. The system should integrate among the supply chain, finance, sales and operation. It might be integrated in such way that will help for mobile tracking and on-demand real time updates of the process.
- g) Market Research and Analysis:** ACI has just introduced the research and development depart a few months back which needlessly to say a very late approach. They should prioritize the development of this department so that they can start the market research on the demands of the products, preferences of customer segments, cost analysis, identifying the bottle necks, trend analysis, forecasting future demands and probable future challenges. This will definitely get ACI to apex to achieve the goal of efficiency.

Conclusion

Changes in the supply chain world is occurring too quickly and multinational like ACI is struggling endlessly to overcome the diverse technical competencies to be in the leading position of the game. Consumers have been the driving fuel of the growth of ACI's business and this consumer could be retained by assuring a proper distribution and availability of the desired products in the right time and in the most competitive price. ACI has to keep track for all of its inventory, supply chain partners, inactive resources, retail handling expenses etc. which will in the long run will help to optimize performance. By meting the increasing demands of the constantly changing business environment, ACI will enhance their value of both clients and partners. Political and government influence on the entire business infrastructure positively and creating more opportunities for the conglomerates like ACI, will definitely lead the way to way expand our business globally. Hopefully soon ACI will opt for setting up its in-house fully active supply chain solution by observing the growing need of its consumers and more popularity as a local brand.

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